

Methodology of the Monthly Index of Services

Annex E: Criteria for Making Quality Adjustments

This annex details the process used to determine the need for and magnitude of quality adjustments applied to data used in the monthly Index of Services and the service sector of quarterly GDP(O).

1. Is the movement shown in the data within the normal bounds for the time series?

- If the series has a regular seasonal pattern, is the movement following this pattern?
- If there is no seasonality, does the movement look reasonable, bearing in mind the past performance of the series (i.e. if the series is particularly volatile, larger movements might be considered more reasonable than if the series is generally stable)?

The data are examined graphically and by reference to quarterly growth rates in order to judge whether the time series is behaving 'normally'.

If the movement shown is within the usual bounds for the series (as indicated by the answers to the questions above), no adjustment is applied unless there is additional information that indicates either that the data are not showing some unusual movement expected because of a known economic event or that the data are in error because of some known effect.

In the above case, if additional information indicates the need for an adjustment, it may be possible to calculate the magnitude of the adjustment based on the available information. If so, this is done. If this is not possible, a best guess based on the information possessed is made, erring on the conservative side where there is doubt. If this decision is still uncomfortable, no adjustment is made.

If the movement shown is outside the normal bounds for the series (i.e. looks unreasonable), move on to step 2.

2. Is there any information available to validate (or invalidate) the movement shown?

- Information from data suppliers (e.g. survey effects or explanations from contributors).
- Information from economic advisors (e.g. real economic events).
- Corresponding movements in relevant alternative data.

If information can be obtained in a timely fashion, the decision whether to adjust (and by how much) is based on that information. If the information indicates the need for an adjustment but gives no clue to the magnitude of the adjustment, an adjustment sufficient

to bring the movement within the normal bounds for the series (as explained in 1 above) is made.

Examples of information likely to validate an unusual movement include:

- evidence of a real-world event that has had an effect upon the data (in this case it is likely that a temporary prior adjustment will also be required as part of the seasonal adjustment process);
- confirmation of real growth in survey response data (e.g. turnover) from survey contributors, via ONS data suppliers; and
- other comparable data showing similar movements.

Examples of information likely to invalidate an unusual movement include:

- an error in the data, as supplied by a survey contributor;
- a change in the reporting system of a survey contributor (e.g. a change in invoicing pattern resulting in the redistribution of annual turnover);
- an error in data collection (e.g. typing error when inputting data);
- a change in survey methodology (e.g. the change in stratification methods in ONS turnover inquiries in January 1997);
- a register update, resulting in a large change in survey grossing factors (weights);
- the reclassification of a major survey contributor;
- a large rotation effect (i.e. significant contributors entering or leaving the sample);
- a discontinuity caused by joining together two different component series covering different time periods in order to create a longer time series;
- data that are known to be unreliable at a particular time (e.g. local authorities' employment data during administration changes in 1995-6); and
- forecast data being used (and appearing to be excessively affected by short-term movements in the real data).

If no useful information can be obtained in time, move on to step 3.

3. What effect will the movement have on published statistics?

- What is the magnitude of the movement when it is weighted up to represent that series in a higher level published output?
- Is this movement likely to carry a significant risk of giving a false message to users (and thereby potentially causing errors in policy making)?

This must necessarily be a subjective decision, and it is here that experience is the most useful resource. The short time available for information gathering on data for the current time period will inevitably lead to the need for decisions of this kind.

If the perceived risk of misleading users is high, an adjustment is made based upon experience of the past behaviour of the data. Such adjustments are reviewed in subsequent production rounds, as more information becomes available.

Revisions to supplied data

Where adjustments have been made, and the data supplied are revised in subsequent deliveries, the adjustments are reviewed. If the data revision moves the series in the same direction as the adjustment, the adjustment is reduced accordingly (i.e. the adjusted period-on-period growth is maintained) or removed completely (if the revision is believed to give a more accurate representation of reality than the estimated adjustment). If the revision moves the series in the opposite direction to the adjustment, further information is sought (e.g. what is the reason for the revision?) and acted upon.

Documentation

In all cases the reason for making an adjustment is clearly documented and accessible to all IoS and GDP(O) compilers. When an adjustment is removed (following data revision or in the light of additional information) the reason for having made it is kept in order to maintain an audit trail of the adjustment process.